JOURNAL OF SCIENTIFIC COMPUTING

Volume 7, Number 1 **March 1992**

CONTENTS

Energy and Spectral Dynamics in Decaying Compressible Turbulence 1
Shigeo Kida and Steven Orszag

The Renormalization Group, the ε-Expansion and Derivation of Turbulence Models 35
Victor Yakhot and Leslie M. Smith

A New Adaptive Grid Generation by Elliptic Equations with Orthogonality at All of the Boundaries 63
Yih Nen Jeng and Yuan Chang Liou

An Iterative Multistep Formula for Solving Initial Value Problems 81
Bahrom B. Sanugi

JOURNAL OF SCIENTIFIC COMPUTING

Volume 7, Number 2 June 1992

CONTENTS

A Stabilized Multidomain Approach for Singular Perturbation Problems 95
Wilhelm Heinrichs

Domain Decomposition and Multigrid Solvers for Flow Simulation in Porous Media on Distributed Memory Parallel Processors 127
R. Bhogeswara and J. E. Killough

Efficient Treatment of Collisions in Simulation Codes for Heavy-Ion Reactions 163
Hans Babovsky

Analytical and Numerical Results on M-Variable Generalized Bessel Functions 175
G. Dattoli, C. Mari, A. Torre, C. Chiccoli, S. Lorenzutta, and G. Maino

JOURNAL OF SCIENTIFIC COMPUTING

Volume 7, Number 3 September 1992

CONTENTS

Hierarchical Gradient Methods for Nonlinear LSQ Problems 197
M. Berger

An Algebraic-Q4 Turbulent Eddy Viscosity Model: Boundary Layer Flow over a Flat Plate and Flow in a Pipe 229
Alexander Yakhot, Omer Kedar, and Steven A. Orszag

Numerical Analysis of Coupled Hydromagnetic Wave Equations with a Finite Difference Scheme 241
M. H. Whang, S. P. Kuo, and M. C. Lee

A Multigrid Algorithm for Parallel Computers: CPMG 263
S. N. Gupta, M. Zubair, and C. E. Grosch

Reject the Rejection Technique 281
John H. Halton

JOURNAL OF SCIENTIFIC COMPUTING

Volume 7, Number 4 **December 1992**

CONTENTS

Numerical Computation of H^{∞} Optimal Performance 289
Hong Yang and J. Michael Orszag

Polynomial Collocation Using a Domain Decomposition Solution to Parabolic PDE's via the Penalty Method and Explicit/Implicit Time Marching 313
Kelly Black

The Application of the Locally Implicit Method to Upwind TVD Schemes 339
Yih Nen Jeng and Uon Jan Payne

A One-Pass Algorithm for Shape-Preserving Quadratic Spline Interpolation 359
Rafhat Iqbal